STRUCHKOV, V.I.; MARSHAK, A.M.

Effective use of new antibiotics in surgery. Khirurgiia 36 no.6: 28-33 Je '60. (MIRA 13:12)
(ANTIBIOTICS) (SURGERY)

STRUCHKOV, V.I., prof.

Remote results of radical surgical treatment of chronic lung suppurations. Khirurgiia 36 no.10:46-51 O '60. (MIRA 13:11)

1. Iz kafedry obshchey khirurgii lechebnogo fakul'teta (zav. - prof. V.I. Struchkov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.
(LUNGS--SURGERY)

BAKULEV, A.N., akad.; BLOKHIN, N.N.; BOGUSH, L.K.; VELIKORETSKIY, A.N., prof.; VOZNESENSKIY, V.P., prof., zasl. deyatel' nauki [deceased]; GULYAYEV, A.V., prof.; DANILOV, I.V., prof.; DUBOV, M.D., doktor med. nauk; KAZANSKIY, V.I., prof.; LIMBERG, A.A.; LINBERG, B.E., zasl. deyatel' nauki, prof.; MEDVEDEV, I.A., dots.; MESHALKIN, Ye.N., prof.; MIRONOVICH, N.I., doktor med. nauk; NIKOLAYEV, O.V., prof.; NIFONTOV, B.V., doktor med. nauk; PETROVSKIY, B.V.; PRIOROV, N.N.[deceased]; RIKHTER, G.A., prof.; ROVNOV, A.S., prof.; RUFANOV, I.G.; STRUCHKOV, V.I.; SHRAYBER, M.I., doktor med. nauk; GORELIK, S.L., dots., red.; YELANSKIY, N.N., red.; SALISHCHEV, V.E., zasl. deyatel' nauki, prof.[deceased]; RYBUSHKIN, I.N., red.; BUL'DYAYEV, N.A., tekhn. red.

[Surgeon's reference book in two volumes] Spravochnik khirurga v dvukh tomakh. Pod obshchei red. A.N.Velikoretskogo i dr. Moskva, Medgiz. (MIRA 14:12)
Vol.1. 1961. 564 p.

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Blokhin, Petrovskiy, Priorov, Rufanov, Limberg). 2. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Bogush, Struchkov, Yelanskiy).
(SURGERY)

STRUCHKOV, V.I., prof.; LUTSEVICH, E.V.

Surgical procedure in gastrointestinal hemorrhages of ulcerative etiology. Khirurgiia no.10:11-15 '61. (MIRA 14:10)

1. Iz kafedry obshchey khirurgii (zav. - chlen-korrespondent AMN SSSR prof. V.I. Struchkov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.
(PEPTIC ULCER) (HEMORRHAGE)

STRUCHKOV, V.I., prof.; DOLINA, O.Z.

Complications in local anesthesia. Khirurgiia 37 no.4:3-6 '61. (MIRA 14:4)

1. Iz kafedry obshchey khirurgii (zav. - prof. V.I. Struchkov) lechebnogo fakul'teta I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.
(LOCAL ANESTHESIA)

STRUCHKOV, Viktor Ivanovich, prof.; BAZHENOVA, A.P., doktor med. nauk; TUMANSKIY, V.K., doktor med. nauk; GRIGORYAN,A.V., kand.med. nauk; KACHKOV,A.P., kand.med.nauk; MARSHAK,A.M., kand.med.nauk; MURAV'YEV,M.V., kand.med.nauk; SIDORINA,F.I., kand.med.nauk; FEDOROV,B.P., kand.med.nauk; VINOGRADOV,V.V., red.; PETROVA, tekhn. red.

[Surgery for suppuration]Gnoinaia khirurgiia; rukovodstvo dlia vrachei. Moskva, Medgiz, 1962. 357 p. (MIRA 15:11)
(SUPPURRATION) (SURGERY, OPERATIVE)

STRUCHKOV, Viktor Ivanovich; OSTROVSKAYA, L.S., red.; PISAREVSKIY, A.A., red.; MIKONOVA, A.M., tekhn. red.

[General surgery]Obshchaia khirurgiia. Moskva, Medgiz, 1962. 494 p. (MIRA 15:8)
(SURGERY)

STRUCHKOV, V. I. (Moskva, I Truzhennikov per., d. 19, kv. 37); GRIGORYAN, A. V.; SAKHAROV, V. A.

Some problems in the surgical treatment of primary cancer of the lung. Grud. khir. 4 no.3:3-9 My-Je '62. (MIRA 15:7)

1. Iz kliniki obshchey khirurgii lechebnogo fakul'teta (zav. - prof. V. I. Struchkov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I. M. Sechenova.

(LUNGS--CANCER) (LUNGS--SURGERY)

STRUCHKOV, V.I., prof. (Moskva)

Problems of pulmonary cancer and its surgical treatment. Khirurgiia no.8:16-22 Ag '62. (MIRA 15:8)

1. Chlen-korrespondent AMN SSSR.
(LUNGS--CANCER)

STRUCHKOV, V.I.; GRIGORYAN, A.V.; ZHDANOV, V.S.

Chronic inflammatory processes and cancer of the lungs. Trudy 1-MMI 16:7-19 '62. (MIRA 17:4)

1. Iz kafedry obshchey khirurgii (zav. - chlen-korrespondent AMN SSSR prof. V.I.Struchkov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova i bol'nitsy imeni Medsantrud (glavnyy vrach - A.N.Lobanova), Moskva.

STRUCHKOV, Viktor Ivanovich; DEMIDKIN, Petr Nikolayevich; KACHKOV, A.P., red.; BUKOVSKAYA, N.A., tekhn. red.

[Radiographic changes in the gastrointestinal tract following an operation on the lungs] Rentgenologicheskie izmeneniia zheludochno-kishechnogo trakta posle operatsii na legkikh. Moskva, Medgiz, 1963. 107 p. (MIRA 16:9)
(ALIMENTARY CANAL--RADIOGRAPHY) (LUNGS--SURGERY)

STRUCHKOV, V.I. (Moskva, Truzhenikov, per., d.19,kv.37); SAKHAROV, V.A.; VOL'-EPSHTEYN, G.L.; TAPINSKIY, L.S.

Some problems in the diagnosis and treatment of chronic purulent diseases of the lungs. Grud.khir. 5 no.1:93-99 Ja-F'63.
MIRA (16:7)

1. Iz kliniki obshchey khirurgii (zav.- chlen-korrespondent AMN SSSR prof. V.I.Struchkov) lechebnogo fakul'teta I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.
(LUNGS—DISEASES) (SUPPURATION)
(LUNGS—SURGERY)

STRUCHKOV, V.I., prof., laureat Leninskoy premii; SIDORINA, F.I., kand. med. nauk

Clinical aspects and treatment of acute pancreatitis. Sov. med. 26 no.4:59-63 Ap '63. (MIRA 17:2)

1. Iz kafedry obshchey khirurgii (zav. - prof. V.I. Struchkov) lechebnogo fakul'teta I Moskovskogo meditsinskogo instituta imeni I.M. Sechenova na baze gorodskoy bol'nitsy No.23 imeni Medsantrud (glavnyy vrach A.N. Lobanova). 2. Chlen-korrespondent AMN SSSR (for Struchkov).

STRUCHKOV, V.I., prof.; LUTSEVICH, E.V.; AL'TSHULER, Yu.B.; LENSKAYA, G.M.

Late results of the treatment of gastrointestinal hemorrhages of ulcerous etiology. Khirurgiia 39 no.10:3-8 O '63. (MIRA 17:9)

1. Iz kliniki obshchey khirurgii (zav.-chlen-korrespondent AMN SSSR prof. V.I. Struchkov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova na baze Moskovskoy gorodskoy klinicheskoy bol'nitsy No.23 imeni Medsantrud (glavnyy vrach A.N. Lobanova).

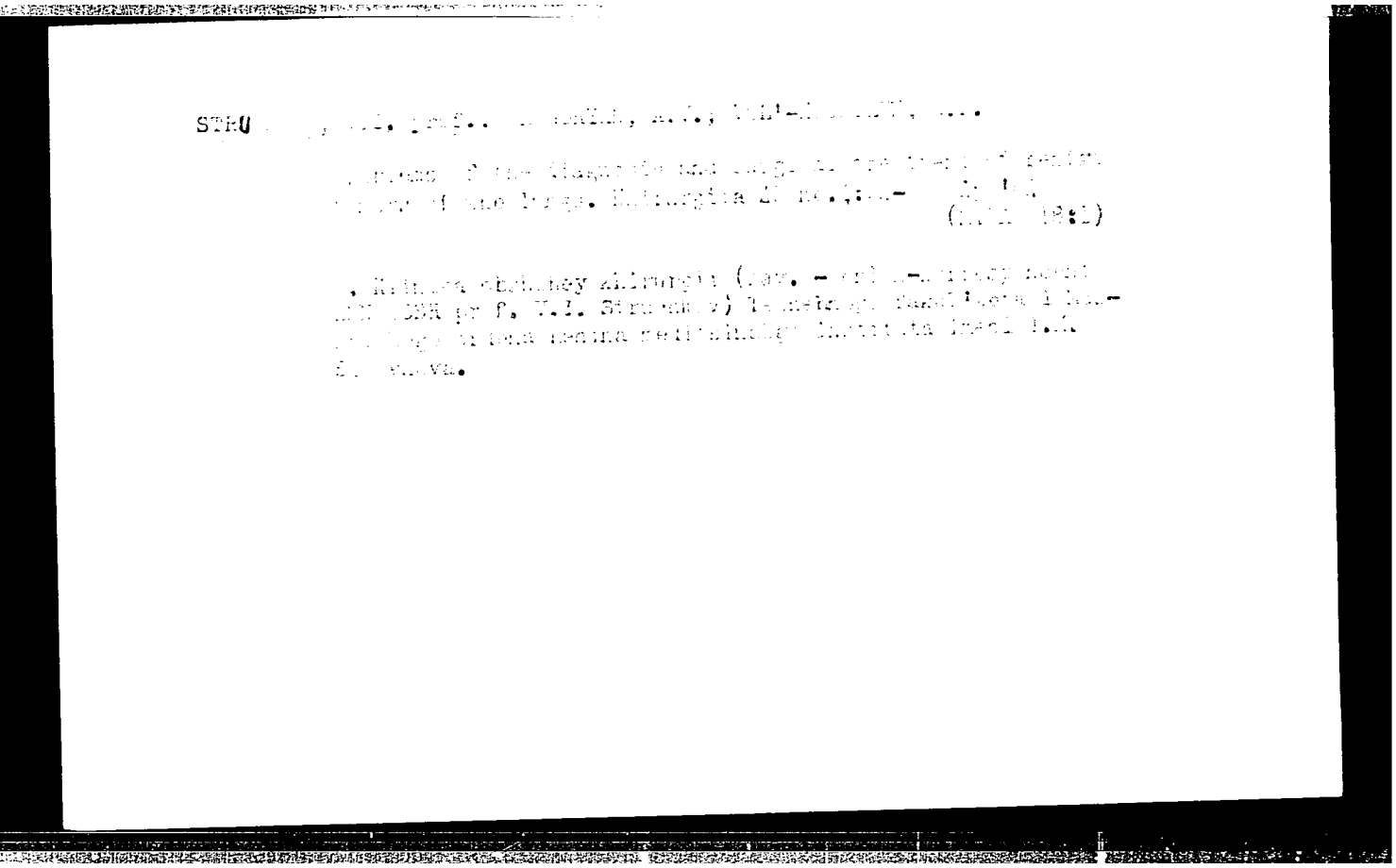
STRUCHKOV, V.I., prof.; FEDOROV, B.P. (Moskva)

Errors in acute appendicitis. Khirurgiia 40 no.2:65-72 F '64.
(MIRA 17:7)

STRUCHKOV, V.I. (Moskva, I. Truzhennikov pereulok, d.19, kv.37); GRIGORYAN, A.V.; FEDOROV, B.P.

Treatment of some pulmonary diseases in conjunction with diabetes mellitus in the surgical clinic. Grud. khir. 6 no.2:90-95 Mr-Ap '64. (MIRA 18:4)

1. Kafedra obshchey khirurgii lechebnogo fakul'teta I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.



[redacted], G.L. (Moskva)

[redacted] pneumothorax. Sov. med. 22 no.3:10-15 (MIRA 18:10)

STRUCHKOV, V.I.; GRIGORYAN, A.V.; VOL'-EPSHTEYN, G.L.; AL'TSHULER, Yu.B.

State of the lung in late periods following its resection; X-ray observations. Sov.med. 28 no.7:49-57 Jl '65.
(MIRA 18:8)

1. Klinika obshchey khirurgii (zav. - chlen-korrespondent AMN SSSR prof. V.I.Struchkov) I Moskovskogo instituta imeni I.M.Sechenova i rentgenovskoye otdeleniye Gorodskoy klinicheskoy bol'nitsy Nr. 23 imeni "Medsantrud" (glavnyy vrach A.N.Lobanova), Moskva.

STR[illegible], [illegible]., Prof.; F[illegible]OV, B.P.; [illegible]DVETSKAYA, L.M.

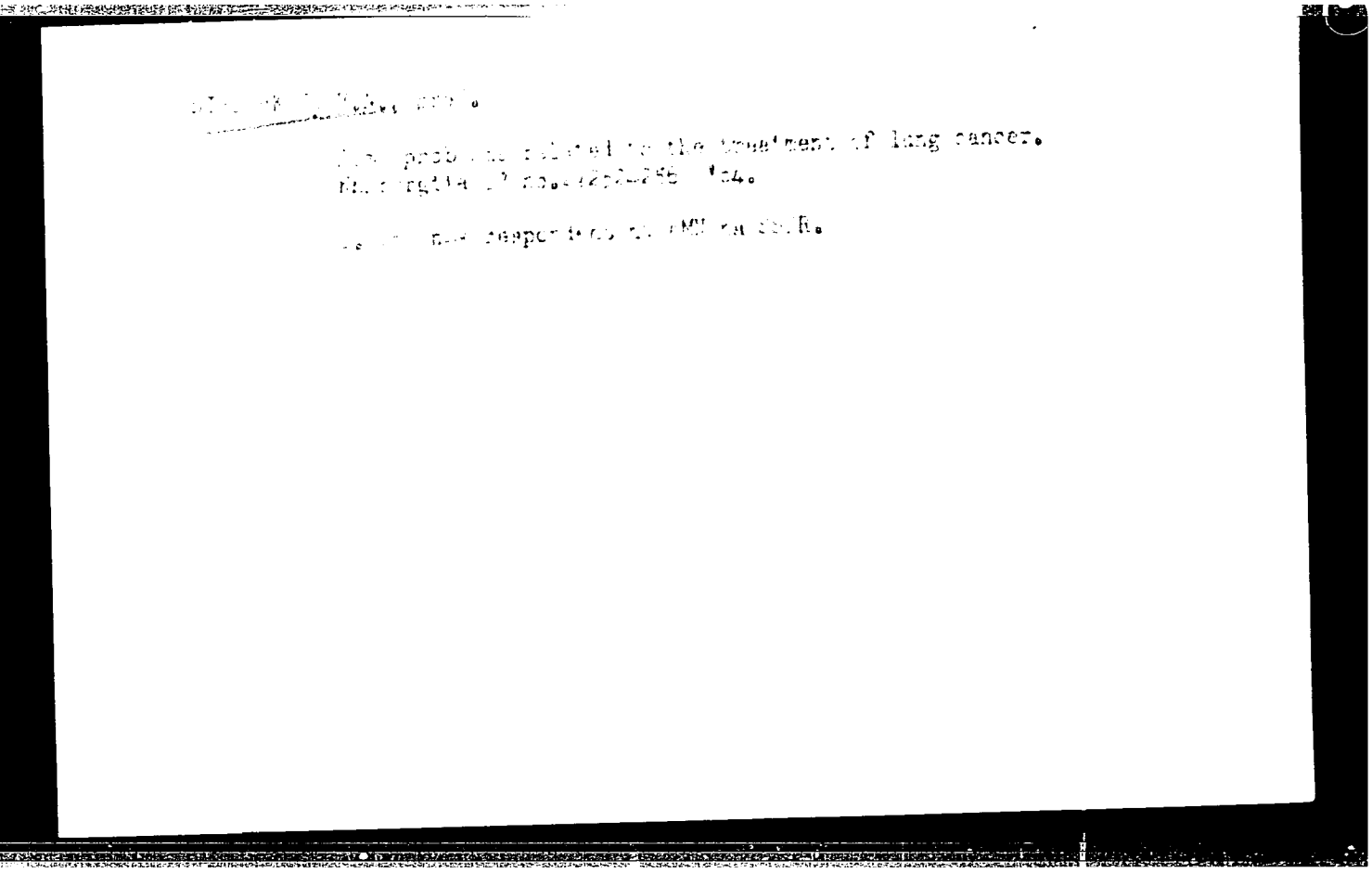
[illegible] problems of the diagnosis and treatment of acute pulmonary [illegible]sses. Sov. med. 28 no.9:3-9 S '65. (MIRA 18:9)

1. Klinika obshchey khirurgii lechebnogo fakul'teta I Moskovskogo meditsinskogo instituta imeni Sechenova i bol'nitsy No.23 imeni "Medsantrud".

STRUCHKOV, V.I., prof. zasluzhennyy deyatel' nauki

Current state and new trends of surgery. Vest. khir. no. 6: 3-12 '65. (MIRA 18:12)

1. Chlen-korrespondent AMN SSSR.



STRUCHKOV, V. V.

P A5/49T102

Jul 48

USSR/Physics
Solar Phenomena
Solar Radiation

"New Index of Solar Activity," V. A. Baranul'ko, V. V. Struchkov, ¼ p

"Priroda" No 7

Relationship between solar activity and ionospheric phenomena is of great importance to radio transmissions. Includes table worked out by Prof V. N. Kessenikh, Moscow State U imeni M. V. Lomonosov, to permit forecasting ionospheric conditions on the basis of solar radiation.

5/49T102

LEVIN, Ye.M., inzh.; STRUCHKOV, Ya.T.

Performance of the reversing gear on mine fans in operation. Ugol' Ukr. 3 no.2:19-22 F '59. (MIRA 12:3)

1. Dongiprouglemash (for Levin). 2. Trest Orgenergougol' (for Struchkov).

(Fans, Mechanical) (Mine ventilation)

LEVASHEV, Ye.D., inzh.; ASTAF'YEV, G.K., inzh.; GURETSKIY, S.A., inzh.; MIRONOV, K.A., inzh.; Prinimal uchastiye STRUCHKOV, Ye.I., inzh.; VINNICHENKO, N.G., kand. ekon. nauk, retsenzent; KULAGIN, N.N., inzh., retsenzent; NEVEZHIN, P.P., inzh., retsenzent; KALININ, V.K., kand. tekhn. nauk, red.; KHITROVA, N.A., tekhn. red.

[Economics, organization, and planning of electric transport] Ekonomika, organizatsiia i planirovanie elektrotiagovogo khoziaistva. [By] E.D.Levashev i dr. 2., perer. izd. Moskva, Transzheldorizdat, 1963. 286 p. (MIRA 16:9)
(Electric railroads—Management)

BOKIY, G.B., professor, redaktor; VIGDOROVICH, G.D. [translator]; STIUCH-KOV, Yu.T., redaktor; MEL'NIKOVA, Ye., tekhnicheskiy redaktor.

[New studies on crystallography and crystallochemistry] Novye issledovaniia po kristallografii i kristallokhimii. No. 3, 4. [The structure of crystals] Kristallicheskie struktury. Moskva, Izd-vo inostrannoi lit-ry. 1951, 166 p., 310 p. [Microfilm] (MLRA 7:10)
(Crystallography) (Crystallochemistry)

STRUCHKOV, Yu. T.

X-ray investigation of benzene condensation products with the acetylene glycol diacetates. Yu. T. Struchkov. *Zhur. Fiz. Khim* 29, 2264–5(1955).—Preliminary results on the x-ray structure studies of benzene condensation products with (1-hydroxyisopropyl)(1-hydroxycyclohexyl)acetylene ($C_{17}H_{30}$, m. 168–9°), bis(1-hydroxycyclopentyl)acetylene ($C_{12}H_{22}$, m. 93–4°), and bis(1-hydroxycyclohexyl)-acetylene ($C_{14}H_{24}$, m. 188–9°). W. M. Sternberg

[illegible]
[illegible], T.L. [illegible]

Crystallography

X-ray study of diphenyliodonium iodide crystals. Zhur. fiz. khim, no. 5, 1952.

Monthly List of Russian Accessions. Library of Congress, November, 1952. Unclassified.

STRUCHKOV, Yu.T.

USSR.

The crystal structure of tris(2-chlorovinyl)dichlorostibines. Yu. T. Struchkov, A. I. Kitaigorodskii, and T. L. Khotsyanova (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Zhur. Fiz. Khim.* 26, 650-7(1952); cf. Nesmeyanov and Borisov, *C.A.* 40, 2123⁹.--Preliminary results are given for the x-ray analysis of the trans-trans-trans (I) and cis-cis-cis (II) isomers of $(ClCH:CH)_3SbCl_2$. The dimensions of the unit cell and the space group are a = 20.82, b = 6.99, c = 17.23 A., β = 101°50', Z = 8, $C2/c$ for I and a = 15.90, b = 6.93, c = 21.02, Z = 8; Pbc for II. The results indicate a certain similarity between the 2 structures.

J. Rovtar Leach

Struchkov, Yu. T.

7

USSR

X-ray study of the crystal structure of *o*-iodobenzoic acid. T. L. Khotsyanova and Yu. T. Struchkov (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Zhur. Fiz. Khim.* 26, 642-8(1952); cf. Kling, C.A. 27, 2613.—The x-ray analysis of *o*-iodobenzoic acid was made to study the steric hindrance between the I in the ortho position and the carboxyl group. The parameters of the elementary cell are: $a = 11.30$; $b = 15.12$; $c = 4.37$ A.; $\beta = 98°$; $Z = 4$. The space group is C_{2h}^5 $P2_1/n$. The coordinates of the I atom ($x = 0.159$; $y = 0.0781$) are detd. by constructing the projections of the F^2 and F series on the ab boundary.

J. Rovtar Leach

USSR

X-ray study of the crystal structure of diphenyliodonium iodide. T. L. Khotsyanova and Yu. T. Struchkov (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Zhur. Fiz. Khim.* 26, 611-3(1952); cf. preceding abstr.—An x-ray analysis was made of crystals of Ph_2II. The parameters of the elementary cells are $a = 22.03 \pm 0.10$; $b = 6.27 \pm 0.04$; $c = 20.42 \pm 0.03$ A; $\beta = 101 \pm 1°$. The positions of the I atoms were detd. by constructing the projections of the F and F^2 series. J. Roytar Leach

7

USSR

X-ray study of the crystal structure of diphenyliodonium chloride. T. L. Khotsyanova and Yu. T. Struchkov (Inst. Org. Chem., Acad. Sci. U.S.S.R., ~~Moscow~~). *Zhur. Fiz. Khim.* 26, 689-71(1952); cf. preceding abstr.—The x-ray analysis of Ph_2ICl showed it to be isomorphous with the iodide. The parameters of the elementary cell are a = 20.06, b = 5.82, c = 20.11 A., β = 102° 40', and the space group is $C2/c$. The coördinates of the halide atoms, x_I = 0.143, z_I = 0.130, x_{Cl} = 0.155, z_{Cl} = 0.011 are detd. from the projections of the F^2 and F series on the ac boundary. J. R. Leach

STRUCHKOV, Yu.T.

KHOTSYANOVA, T.L.; KITAYGORODSKIY, A.I.; STRUCHKOV, Yu.T.

The crystal structure of tetraiodoethylene, C_2I_4. Dokl. Akad. Nauk SSSR 85, No.4, 785-8 '52. (MLRA 5:8)
(PA 56 no.671:8096 '53)

STRUCHKOV, YU. T.

Chemical Abstracts
Vol. 48 No. 5
Mar. 10, 1954
General and Physical Chemistry

Crystal structure of Iodoform. T. L. Khotsyanova, A. I. Kitaigorodskiĭ, and Yu. T. Struchkov (Inst. of Org. Chem., Acad. Sci. U.S.S.R., Moscow). Zhur. Fiz. Khim. 27, 647-50(1953); cf. *C.A.* 47, 7854h.—The crystal structure of CHI_3 was detd. by x-ray diffraction. The valence angle I-C-I is 109 ± 5°. The bond length C-I is 2.18 ± 0.06 A., 0.06 A. more than the value found by Bastiansen by electron diffraction. The distance between I atoms within the mol. is 3.56 A. The spatial arrangement of the mols. is described and discussed. J. W. Loweberg, Jr.

Struchkov, Yu. T.

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USSR

548.736.1

1018. The crystal structure of iodine. A. I. KITAIGORODSKII, T. L. KHOTSYANOVA AND YU. T. STRUCHKOV. *Zh. fiz. Khim.*, 27, *No.* 6, 780–1 (1953).

The crystal structure of iodine has been redetermined with results substantially in agreement with earlier work. Atoms lie in (*f*) positions in the space group *Ccmb* with (*x*, *z*) parameters (0·149$_4$, 0·115$_6$). The 121 observed reflections were corrected for absorption and used to give a Patterson section at $y = 0$. The molecular I–I distance was found to be 2·68 ± 0·01 Å, intralayer distances to be 3·56 and 4·04, and I–I distances between layers 4·35 and 4·38 Å. The form of the molecule is shown in a diagram.

A. L. MACKAY

Struchkov, Yu. T.

USSR

Crystal structure of tetraiodoethylene. T. L. Khotsyanova, A. I. Kitaigorodskiĭ, and Yu. T. Struchkov (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Zhur. Fiz. Khim.* 27, 1330–43(1953); cf. *C.A.* 47, 7854*h*; 49, 2145*g*.—The cryst. structure of C_2I_4 was detd. by x-ray diffraction. The parameters of the monoclinic unit cell (a, b, c, and β) are 15.10 ± 0.05, 4.45 ± 0.02, 13.00 ± 0.04 A., and 109 ± 1°, resp. The unit cell has 4 mols.; the exptl. d. is 3.98. The space group is C_{2h}^5–$P2_1/c$. Within the mol. the distances C to C, C to I, and I to I, calcd. by means of a 3-dimensional electron-d. plot, are 1.34, 2.15, and 3.64 A., resp., and the angles I–C–I and I–C–C are 115°30′ and 122°15′, resp. The internol. radii of I and C are 2.00 and 1.80 A., resp. Coördinates of the atoms in the lattice are tabulated; the arrangement of the mols. in the crystal is discussed with illustrations. J. W. Lowcberg, Jr.

Struchkov, Yu. T.

USSR.

The method of röntgenographic analysis used in the study of the crystal structure of tetraiodoethylene. A. I. Kitaigorodskiĭ, T. L. Khotsyanova, and Yu. T. Struchkov (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Zhur. Fiz. Khim.* 27, 1490–1502(1953); cf. *ibid.* 1330.—A math. discussion. An objective method is proposed for the conversion of the results of relative measurements of F_{hk} and F_{hk} to abs. units and the calcn. of the mean-f curve. The validity of the at.-factor formula $f = ke^{-\alpha s^2}$, where k and α are consts. and $s = 4\pi \sin\theta/\lambda$, is shown. Methods are given for detg. the coördinates of atoms along one axis if the remaining coördinates are known, and for detg. the coördinates of max. in 2- and 3-dimensional series. Formulas for the probable error of detn. of electron d. are given and applied to exptl. data (*loc. cit.*). The detection of light atoms in the presence of heavy ones is discussed. J. W. L., Jr.

Struchkov, Yu. T.

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M. AYOUTZ
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USSR.

548.737

4024. X-ray structural study of trans-trans-trans-tri-β-chlorvinyldichlorostibine. YU. T. STRUCHKOV AND T. L. KHOTSYANOVA. *Dokl. Akad. Nauk SSSR*, 91, No. 3, 565–8 (1953) *In Russian.*

Crystals were monoclinic, elongated along *b*, with space group $C2/c$ and $Z = 8$; dimensions were measured as $a = 20{\cdot}96 \pm 0{\cdot}1$, $b = 7{\cdot}00 \pm 0{\cdot}02$, $c = 17{\cdot}23 \pm 0{\cdot}09$ Å and $\beta = 101° 50' \pm 10'$. An F^2-series projection on to the *ac*-plane gave the *x* and *z* co-ordinates of the Sb and Cl atoms. These were refined by two *F*-series projections. The *y* co-ordinates of the heavy atoms came from a 3-dimensional F^2 line. For further refinement of Sb and Cl positions and location of C atoms two 3-dimensional *F*-summations, each using 1202 terms, were calculated. Final positions are tabulated, the errors in C atom positions being estimated at 0·01–0·03 Å. Bond lengths agree with those found for similar compounds. The configuration round the Sb atom is trigonal bipyramidal, with Cl atoms above and below and the three C atoms of the vinyl groups nearly 120° apart in the equatorial plane. The exact shape of each vinyl group is discussed.

A. L. MACKAY

Inst. Org.-Chem., A S USSR

STRUCHKOV, Yu. T.

Chemical Abstracts
May 25, 1954
General and Physical
Chemistry

Crystal structure of products of addition of coumarin and mercuric chloride and bromide. Yu. T. Struchkov, A. I. Kitaigorodskii, and T. L. Khotsyanova. *Doklady Akad. Nauk S.S.S.R.* 93, 675–8(1953).—X-ray analysis of coumarin-$HgCl_2$ (I) and coumarin-$HgBr_2$ (II) addn. compds. was made. Both are isomorphous with space group $P2_1/a$ on monoclinic syngony. There are 4 mols. per unit cell, whose dimensions are: I a 23.63 A., b 11.27, c 4.03, β 97°46′, V 1064 cu. A.; II 24.01, 11.31, 4.10, 97°30′, 1108 cu. A. The products are not added at the double bond of coumarin. The shortest Hg-Cl distance in a crystal of I is 3.3 A., and the products I and II are mol. compds. like RC:O...HgX_2. Cl atoms are at equal distance (2.33 A.) from Hg, with 171° angle. The Hg-O_1 distance is 2.38 A. The mols. are closely packed on the c axis, forming a twinned ribbon of octahedral Cl_4HgO units. The following interat. distances are abnormal: C—O (C in the 2 position) is slightly shortened; C=O is lengthened. Probable dispositions are shown on diagrams. In II the shortening of Hg—O is less (2.73 A.). G. M. K.

USSR/Physics - X-ray Analysis, Crystallographic — Mar/Apr 51

"Determination of Chemical Formulas by the Method of Roentgeno-Structural Analysis," A. I. Kitaygorodskiy, Yu. T. Sturchkov, Inst of Org Chem, Acad Sci USSR

PA 187T90

"Iz Ak Nauk SSSR, Ser Fiz" Vol XV, No 2, pp 176-178

Authors have X-rayed hundreds of chem compds during the 38 years of the existence of roentgeno-structural analysis. Their main efforts have been directed toward detg the distances between atoms in mols and crystals. In most cases the chem formula

LC

187T90

USSR/Physics - X-ray Analysis, Crystallographic (Contd) — Mar/Apr 51

can be detd by subject method if some orienting data is kn known, as in the case of penicillin. Submitted at 3d All-Union Conference on Use of X-rays in Study of Materials held 19 - 24 Jun 50 in Leningrad

LC

187T90

STURCHKOV, YU. T.

STRUCHKOV, Yu. T.

USSR/ Scientific Organization - Chemistry

Card 1/1 : Pub. 124 - 21/35

Authors : Struchkov, Yu. T., Cand. of Chem. Sc.

Title : Development of crystallochemical investigations

Periodical : Vest. AN SSSR 7, 79-83, July 1954

Abstract : Minutes of the conference held at the N. S. Kurnakov Institute of General and Inorganic Chemistry of the Acad. of Sc. USSR, at which various problems of crystallochemical investigation were discussed.

Institution : ....

Submitted : ....

STRUCHKOV, Yu. T. and Nenart, B. V.

"Nomograph for computing Structural Amplitudes"
Tr. In-ta Kristallogr. AN SSSR, No 9, 1954, 317-320

An improved nomograph is described for finding the values cos $2\pi hx$ cos $2\pi ky$ or sin $2\pi hx$ sin $2\pi ky$ and considerably facilitating the computations of structural amplitudes. (RZhFiz, No 9, 1955.)

SO; Sum-No 787, 12 Jan 56

STRUCHKOV, Yu.T., kandidat khimicheskikh nauk.

Development of crystallochemistry research; conference at the N.S.Kurnakov Institute of General and Inorganic Chemistry of the U.S.S.R. Academy of Sciences. Vest. AN SSSR 24 no.27:79-83 Jl '54. (MLRA 7:8)
(Crystallochemistry--Congresses)

STRUCHKOV, Yu. T.

TERENT'YEV, A.P.; KOST, A.N.; TSUKERMAN, A.M.; POTAPOV. V.M.; SERGEYEV, P.G., professor, redaktor; STRUCHKOV, Yu.T., redaktor; MOSKVICHEVA, N.I., tekhnicheskiy redaktor.

[Nomenclature of organic compounds; survey, criticism, proposals] Nomenklatura organicheskikh soedinenii; obzor, kritika, predlozhenia. Moskva, Izd-vo Akademii nauk SSSR, 1955. 302 p. (MLRA 8:12)
(Chemistry, Organic--Nomenclature)

BARANOV, V.I.; VINOGRADOV, A.P., akademik, redaktor; MYASNIKOV, I.A. redaktor; STRUCHKOV, Yu.T., redaktor; MOSKVICHEVA, N.I., tekhnicheskiy redaktor.

[Radiometry] Radiometriia. Moskva, Izd-vo Akademii nauk SSSR, 1955. 327 p. (MLRA 8:12)
(Radiation--Measurement)

STRUCHKOV, Yu.T.

KITAYGORODSKIY, A.I.: BOKIY, G.B., professor, otvetstvenny/ redaktor; STRUCHKOV, Yu.T., redaktor; NEVRAYEVA, N.A., tekhnicheskiy redaktor

[Organic crystallochemistry] Organicheskaia kristallokhimiia. Moskva, Izd-vo Akademii nauk SSSR, 1955. 558 p. (MLRA 8:7)
(Crystallochemistry)

STRUCHKOV, Yu.T.

X-ray study of the products of condensation of benzene with diacetates of acetylene glycols. Zhur.fiz.khim. 29 no.12: 2264-2265 D '55. (MLRA 9:5)

1. Akademiya nauk SSSR, Institut elementoorganicheskikh soyedineniy, Moskva.
(Acetylene) (Benzene) (Condensation products (Chemistry))

TOPCHIYEV,A.V.; ZAVGORODNIY,S.V.; PAUSHKIN,Ya.M.; SHUYKIN,N.I., redaktor; STRUCHKOV,Yu.T., redaktor; ZELENKOVA,Ye.V., tekhnicheskiy redaktor

[Boron fluoride and its compounds as catalyzers in organic chemistry] Ftoristyi bor i ego soedineniia kak katalizatory v organicheskoi khimii. Moskva, Izd-vo Akademii nauk SSSR, 1956. 356 p. (MLRA 9:4)

1. Chlen-korrespondent AN SSSR (for Shuykin)
(Boron fluoride)

TOPCHIYEV, Aleksandr Vasil'yevich, akademik; STRUCHKOV, Yu.T., redaktor izdatel'stva; SIMKINA, Ye.N., tekhnicheskiy redaktor

[Nitration of hydrocarbons and other organic compounds] Nitrovanie uglevodorodov i drugikh organicheskikh soedinenii. Izd. 2-oe, perer. i dop. Moskva, Izd-vo Akademii nauk SSSR, 1956. 488 p. (MLRA 9:7)
(Hydrocarbons) (Nitration)

STRUCHKOV, Yu. T.

2

The crystal structure of tetraphenylphosphonium iodide and the configuration of tetraaryl ions and molecules. T. L. Khotsyanova and Yu. T. Struchkov. *Kristallografiya* 1, 669-70(1956). Crystals of [illegible] [illegible] The unit cell is tetragonal with space group $I\bar{4}$ = [illegible] a = 11.88 ± [illegible], c = 6.96 ± 0.02 A. and Z = 2. [illegible] = approx. 1.5, $d_{calcd.}$ = 1.58. 241 independent reflections were measured. The at. parameters [illegible] are I (0,0,0); P (0,½,¼); C_1 (0.067, 0.402, 0.031); C_2 (0.010, 0.286, 0.085); C_3 (0.096, 0.207, −0.032); C_4 (0.173, 0.251, −0.160); C_5 (0.200, 0.369, −0.154); C_6 (0.143, 0.447, −0.037); H_2 (−0.021, 0.255, 0.177); H_3 (0.077, 0.115, −0.029); H_4 (0.215, 0.193, −0.256); H_5 (0.262, 0.402, −0.240); H_6 (0.159, 0.540, −0.010); center of gravity of benzene nucleus (0.120, 0.327, −0.035). The H atoms were not resolved and the above positions were assumed from C—H = 1.08 A. The P—C bond length was found to be 1.80 A. and the angles C—P—C 103° and 112.6°.

A. L. Mackay

Struchkov, Yu. T.

B-5

USSR/Physical Chemistry - Crystals.

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 210

Author : Yu.T. Struchkov.

Inst : Academy of Sciences of USSR

Title : Crystalline Structure of Dibenzoylferrocene.

Orig Pub : Dokl. AN SSSR, 1956, 110, No 1, 67-70

Abstract : The compound $(C_6H_5CO)_2(C_5H_4)_2Fe$ produces monoclinic crystals: a = 11.69, b = 25.36, c = 6.27 A, $\beta = 90^\circ$, ρ (meas.) = 1.40, Z = 4, f . f. - $P2_1/n$. Deciphering of the structure was carried out by the way of using the two-dimensional interatomic vector series and the electron density and by means of computing and inverting the complete three-dimensional series P(xyz). The distances Fe-C. (2.05 A) and C-C (1.4. A) in the ferrocene nucleus (FN)

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USSR/Physical Chemistry - Crystals. B-5

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 210

which is explained obviously not only by the tendency to a dense packing, but also by a reciprocal influence among the five-membered rings of FN. In order to avoid spatial difficulties, the benzene nuclei are turned around the ordinary links for 60° with reference to the planes of the five-membered rings. Preliminary data concerning three diacylferrocenes were obtained, viz.: diacetylferrocene (I) with a = 14.89, b = 13.03, c 5.90 A, β = 90°, Z 4, f. f. - $P2_1/a$: dipropionylferrocene (II) with a 13.40, b = 5.80, c = 37.92 A, Z = 8, f. f. -Pbca; dibutyrylferrocene (III) with a = 11.84, b = 14.07, c = 9.73, Z = 4, f. f. Aba. It is obvious that the molecules of I have the 1,2'-configuration in crystals. The molecules of III (m or 2 symmetry in crystals) can answer only to 1,1'-isomers in case of the m symmetry, and to any of the 3 kinds in case of the 2 symmetry.

Card 3/3

STRUCHKOV, G. T., and KHOTSYANOVA, T. L.

"The X-Ray Investigation of Crystals of some Ferrocene Derivatives" (Section 7-10) a paper submitted at the General Assembly and International Congress of Crystallography, 10-19 Jul 57, Montreal, Canada.

C-3,800,189

STRUCKOV, G. T., and KHOTSYANOVA, TL

Institute of Elemento-Organic Compounds, Moscow-"The Crystal Structures of Diphenyl-halogenonium Compounds" (Section 7-9) a paper submitted at the General Assembly and International Congress of Crystallography, 10-19 Jul 57, Montreal, Canada.

C-3,800,189

STRUCHKOV, G. T., KHOTSYANOVA, TL, and KITAYGORODSKIY, A. Y.

Institute of Elemento-Organic Compounds, Moscow- "The Crystal Structure of Some Tropylium Salts" (Section 7-11) a paper submitted to the General Assembly and International Congress of Crystallography, 10-19 Jul 57, Montreal, Canada,

C-3,800,189

ASATIANI, Vladimir Samsonovich; VOYMAR, A.O., professor, otvetstvennyy redaktor; STRUCHKOV, Yu.T., redaktor izdatel'stva; ZELENKOVA, Ye.V., tekhnicheskiy redaktor

[Biochemical photometry] Biokhimicheskaia fotometriia. Moskva, Izd-vo Akad.nauk SSSR, 1957. 835 p. (MLRA 10:10)
(PHOTOMETRY). (BIOCHEMISTRY)

70-3-9/20

AUTHOR: Struchkov, Yu.T. and Khotsyanova, T.L.

TITLE: X-ray investigation of the crystals of some ferrocene derivatives. (Rentgenograficheskoe issledovaniye kristallov nekotorykh proizvodnykh ferrotsena)

PERIODICAL: "Kristallografiya" (Crystallography), 1957, Vol. 2, No.3, pp. 382 - 383 (U.S.S.R.)

ABSTRACT: The investigation of substituted ferrocene derivatives has been undertaken to determine their molecular configuration in crystals, since from a theoretical point of view there are several possible configurations, corresponding to various rotational isomeres. It is also necessary to establish what factors determine a choice of a configuration realised in crystal: a specific mutual influence of substituents or a tendency to minimise steric hindrances in a molecule and to acquiring maximum density of packing.

The crystals of the diketoferrocenes investigated are characterised by the data in Table 1, p. 382.

The crystal structure of dibenzoylferrocene, $Fe(C_5H_4COC_6H_5)_2$, has been investigated in greater detail. Tentative data on the signs of the structure amplitudes have been obtained by minimisation of a three-dimensional Patterson function and by application of the statistical approach. Atomic co-ordinates

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X-ray investigation of the crystals of some ferrocene derivatives. (Cont.)

have been determined by a three-dimensional electron-density distribution, Bond distances are: Fe-C = 2.05 ± 0.02 Å; C - C = 1.41 ± 0.03 Å (in the ferrocene nucleus), 1.39 ± 0.03 Å (in the benzene rings) and 1.52 ± 0.02 Å (between atoms of the cyclic rings and atoms of a ketogroup); C - O = 1.21 ± 0.01 Å. The benzoyl groups are not located in planes of five-membered rings but are turned out of them by rotation about ordinary bonds C - C for minimising steric hindrances in the molecule. In the crystal the molecule has an asymmetric configuration corresponding to the rotational 1,2'-isomer. The packing coefficient of this structure has the usual value 0.76.

Determination of the signs of structure amplitudes for diacetyl-, dipropyonyl- and dibutyrylferrocenes has appeared more difficult since the ferrous atom does not take part in a great number of reflexions because its co-ordinates have special values. This notwithstanding, comparison of unit cells of dibenzoylβ, diacetyl- and dipropyonylferrocenes reveals some similarity between them and has made it possible to propose an approximate molecular orientation for the two latter compounds. This approximate orientation has been made more precise by calculation of two-dimensional series which also indicate the

70-3-9/20

X-ray investigation of the crystals of some ferrocene derivatives. (Cont.)

1,2' -configuration. A molecule of dibutyrylferrocene occupies in the crystal a special position with the symmetry 2; its orientation in the unit cell has been established by a two-dimensional approach.

The investigation of some other disubstituted ferrocene derivatives is in progress (di-p-bromophenylferrocene, dimethyl ester of ferrocene dicarboxylic acid and dialkylferrocenes). (Full translation of text.) There are 1 figure and 1 table.

ASSOCIATION: Institute of Elementary Organic Compounds (Institut Elementoorganicheskikh soedineniy)

SUBMITTED: February 22, 1957.

AVAILABLE: Library of Congress

Card 3/3

70-3-10/20

AUTHOR: Khotsyanova, T.L. and Struchkov, Yu.T.

TITLE: The crystal structures of diphenylhalogenonieve compounds. (Kristallicheskiye struktury difenilgalogenonievykh soyedineniy)

PERIODICAL: "Kristallografiya" (Crystallography), 1957, Vol.2, No.3, pp. 384-385 (U.S.S.R.)

ABSTRACT: The present work constitutes a part of a more general investigation of halogenonium compounds which is now in progress. These compounds contain a halogen atom X = Cl, Br, I in a valence state: $\rangle X^{+} \leftrightarrow \rangle X-$.

The best known representatives of this series of compounds have the following general formulae:

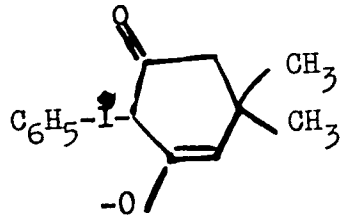
$$\begin{matrix} R' \\ R \end{matrix}\rangle XY,$$

where R and R' are organic radicals, Y is an 'anion' (Cl^-, Br^-, I^-, $[BF_4]^-$ etc.). Some cases are known when an 'anion' and a 'cathion' of halogenonium compound represent parts of the same molecule, as exemplified by phenyldimedonyliodon,

Card 1/5

70-3-10/20

The crystal structures of diphenylhalogenonieve compounds. (Cont.)



From the chemical point of view an investigation of such compounds is of interest for showing the nature of an X - Y bond (which in some cases is not purely ionic but has an intermediate character) and for establishing a valence configuration of a central halogen atom X.

The crystals of diphenyliodonium chloride and iodide are isomorphous (see table, p. 384)

The co-ordinates of heavy atoms have been determined by a two-dimensional Patterson function P(x, 0, z) and by Harker section at y = 1/2. The full structures of these compounds have been established by calculating a three-dimensional electron-density distribution.

Card 2/5 Bond distances are: C - I = 2.08 Å, I - Cl = 3.08 Å, I - I = 3.29 Å. The bonds I - Cl and I - I are longer than

C

The crystal structures of diphenylhalogenonieve compounds. (Cont.)

covalent bonds and approach ionic bonds. The molecules of both compounds have T-shaped configuration: C - I - C = 98°, C - I - Cl = 87° and 174°. Benzene rings are turned about I - C bonds relative to the C - I - C plane in order to remove steric hindrances between them. The molecules in crystal are united in 'dimeric' pairs at symmetry centres (1/4, 1/4, 0), approaching each other by their polar ends; the distances between these parts of the molecules (I ... Cl = 3.20 Å, I ... I = 3.34 Å) are remarkably shorter than the sums of the van der Waals radii. In iodide crystals intra- and intermolecular distances I ... I are essentially equal so that this structure may be regarded as ionic. The packing of non-polar parts of the molecules (benzene rings) has the usual density (van der Waals radii are I 2.1 Å, C 1.8 Å, H 1.1 Å).

The crystals of fluoroborates of diphenyliodonium, diphenylbromonium and diphenylchloronium are not isomorphous (see table, p.385).

For determining the structure of diphenyliodonium fluoroborate two-dimensional Patterson functions calculated with reflections 0kl, also 1kl and 3kl (generalised projections) and three-dimensional electron-density distributions have been applied.

The crystal structures of diphenylhalogenonieve compounds. (Cont.)

The investigation of diphenylchloronium and diphenylbromonium fluoroborates is less detailed (two-dimensional Patterson functions, their minimising, two-dimensional electron-density maps); it is intended to undertake further refinement by three-dimensional electron-density calculation. In these purely ionic structures cathions have an angular configuration, the angle C - X - C exceeds 90° and benzene rings are turned out of the plane C - X - C to remove steric hindrances. The packing of these bulky cathions and tetrahedral anions $[BF_4]^-$ is of interest.

The non-centrosymmetrical structure of a double compound $(C_6H_5)_2ICl.HgCl_2$ has been determined by three Patterson and electron-density projections. The crystals belong to space group $P2_12_12_1$ with four molecules in the unit cell ($a = 13.50 \pm 0.05$, $b = 5.82 \pm 0.03$, $c = 18.60 \pm 0.10$ Å). $HgCl_2$ molecules lose their individuality in crystal, forming a peculiar polyhedral chain with shared chlorine ions extended along a 2_1 axis parallel to [010]. Molecules $(C_6H_5)_2ICl$ have

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The crystal structures of diphenylhalogenonieve compounds. (Cont.)

T-shaped configuration (similar to that found in the diphenyl-iodonium chloride crystals) and adjoin this polyhedral chain by their polar parts, approaching Hg atoms with their chlorines. Non-polar parts of these molecules pack themselves in the usual manner. (Full translation of test) There are 2 tables.

ASSOCIATION: Institute of Elementary Organic Compounds. (Institut Elementoorganicheskikh soedineniy)

SUBMITTED: February 22, 1957.

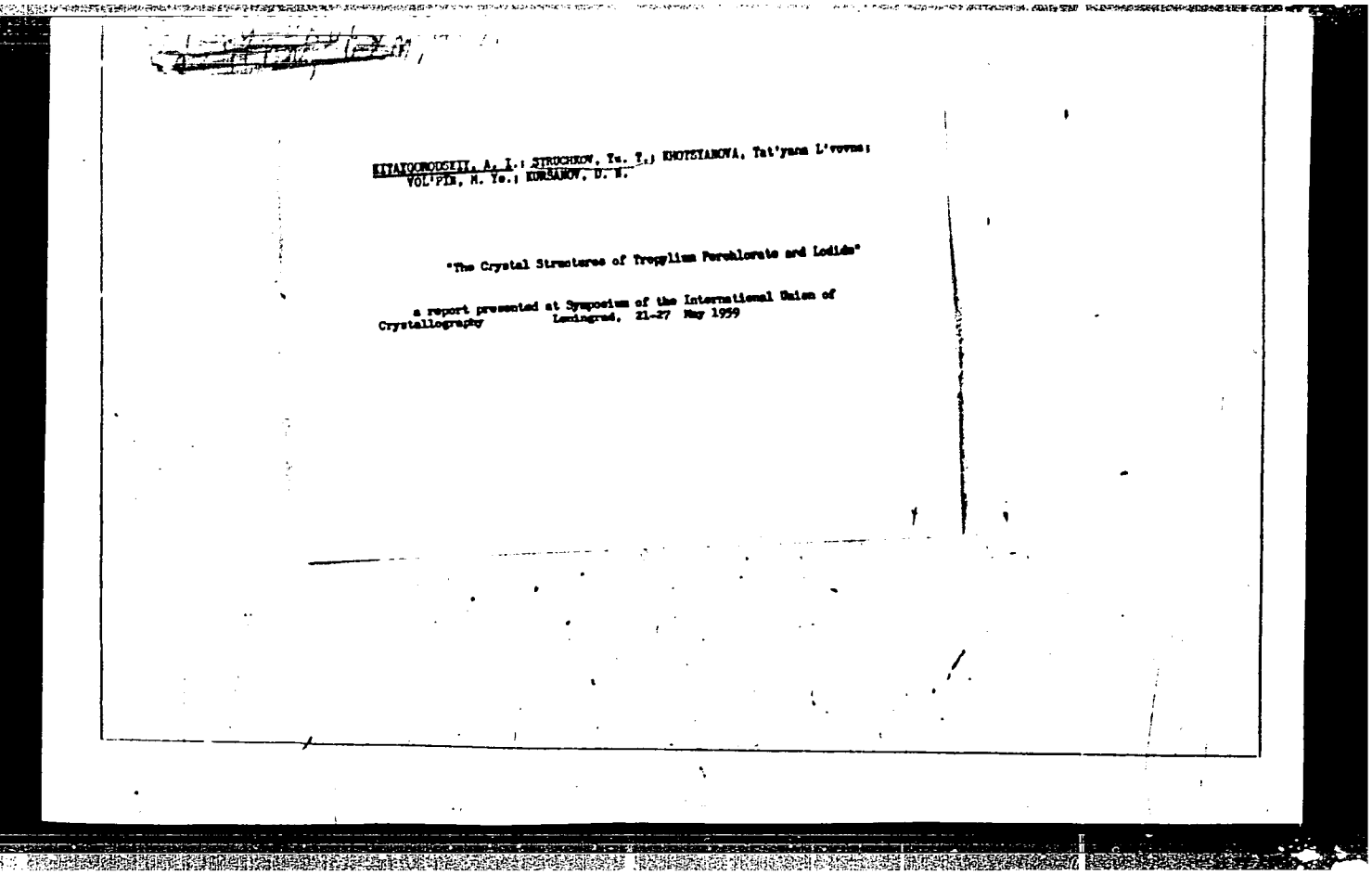
AVAILABLE: Library of Congress

Card 5/5

STRUCHKOV, Yu.T.

X-ray structural analysis of organic compounds of various elements. Stereochemistry of ferrocene and its derivatives. Zhur. ob. khim. 27 no.8:2039-2049 Ag '57. (MLRA 10:9)

1. Institut elementoorganicheskikh soyeninenly Akademii nauk SSSR.
(Iron organic compounds) (Stereochemistry)



BITAYGORODSKIY, A. I.; STRUCHKOV, Yu. T.; KHOTSIANOVA, Tat'yana L'vovna; VOL'PIN, M. Ye.; KURSANOV, D. N.

"The Crystal Structures of Tropylium Perchlorate and Iodide"

a report presented at Symposium of the International Union of Crystallography Leningrad, 21-27 May 1959

STRUCHKOV, Yu. T.

A. I. Kitaygorodskiy and Yu. T. Struchkov, "Conformations of Molecules of Sterically Stretch Benzene Polyderivatives."

report presented at the Symposium on Concepts of Conformation In Organic Chemistry which took place in Moscow at the IOKh AN SSSR (Institute of Organic Chemistry, AS USSR) from September 30 to October 2, 1958.

Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1959, No. 3, 561-564.

24.7100

77061
SOV/62-59-12-5/43

AUTHORS: Liang Tung-Ch'ai, Struchkov, Yu. T.

TITLE: Crystalline Structure of p-Diiodobenzene

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 12, pp 2095-2099 (USSR)

ABSTRACT: The authors analyzed the crystal structure and molecular packing in crystals of p-diiodobenzene. Crystal parameters, obtained by the oscillating crystal method (in RKU-86 camera by the use of unfiltered Cu-radiation) where: a = 17.008 ± 0.002; b = 7.321 ± 0.002; c = 5.949 ± 0.002 A; V = 740.7 ± ± 0.5 A^3. Its space group is V_h^{15} = Pbca with 4 molecules per unit cell. (Abstracter's Note: The symbol V_h^{15} was not identified.) Projections (ab and ac) of electron density and geometric analysis (see Fig. 1) allowed calculation of atomic coordinates for the molecule, which led to the value of C - I distance equal to 2.02 A. The shortest intermolecular distances

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Crystalline Structure of p-Diiodobenzene

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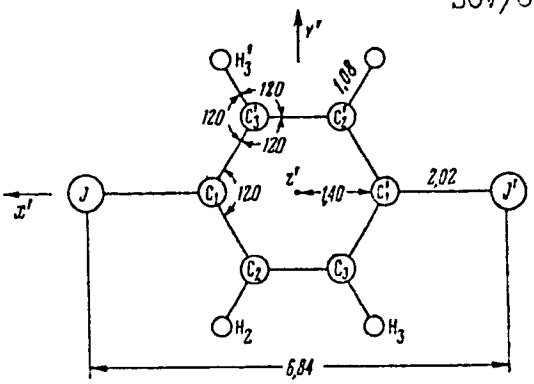

Fig. 1. The model of the p-diiodobenzene molecule used in the geometric analysis.

(listed in Table 2) led to the usual values of the intermolecular radii (R_I = 2.13 ± 0.06; R_C = 1.82 ± ± 0.02; R_H = 1.24 ± 0.05 A). From the molecular volume (V_o = 145 A^3) the "packing factor," k, was

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Table 2

The shortest intermolecular distances

Atoms	Distance (in A)	Sum of the radii (in A)	Difference (in A)
I(1) - I(II)	4,07	4,26	-0,19
I(1) - I'(III)	4,29	4,26	+0,03
$C_3(I)$ - $C_3(III)$	3,67	3,64	+0,03
$C_1'(I)$ - $C_3(III)$	3,62	3,64	-0,02
$H_2(I)$ - I(II)	3,44	3,37	+0,07
I'(I) - $H_2(III)$	3,42	3,37	+0,05
I'(I) - $C_2(III)$	4,01	3,95	+0,06
$C_2'(I)$ - $H_3(III)$	2,98	3,06	-0,08
$C_3'(I)$ - $H_3(III)$	3,03	3,06	-0,03

found to be 0.78. There are 3 figures; 2 tables; and 4 references, 1 Soviet, 1 German, 1 Danish, 1 U.S. The U.S. reference is: S. B. Hendricks, L. R. Maxwell, V. L. Moseley, M. E. Jefferson, J. Chem. Phys., 1, 549 (1933).

ASSOCIATION: Institute of Elemento-Organic Compounds of the Academy of Sciences, USSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

SUBMITTED: April 24, 1958

STRUCHKOV, Yu.T.;SOLENOVA-SIDOROVA, S.L.

Crystalline structure of 2,4,6-trichlorobromobenzene. Vest Mosk. un. Ser. mat., mekh., astron., fiz., khim. 14 no.2:157-168 '59 (MIRA 13:3)

1. Kafedra kristallografii i kristallokhimii Institut elementoorganicheskikh soyedineniy AN SSSR.

(Benzene)

STRUCHKOV, Yu.T.; LOBANOVA, G.M.

X-ray study of ortho-tungsten esters. Vest Mosk. un. Ser. mat., mekh., astron., fiz., khim. 14 no.2:169-178 '59 (MIRA 13:3)

1. Kafedra kristallografii i kristallokhimii, Institut elementoorganicheskikh soyedineniy AN SSSR.
(Tungsten compounds)

STRUCHKOV, Yu. T., KROTSYANOVA, T. L.

"~~6~~b. The Crystal Structure of Diphenyliodonium Fluoroborate."

Inst. of Organo-Element Compounds, Leninsky prosp. 31, Moscow, USSR.

paper submitted for 5th Gen. Assembly, Symposium on Lattice Defects, Intl. Union of Crystallography, Cambridge U.K. Aug 1960.

AUTHOR:

TITLE:

PERIODICAL:

ABSTRACT: X-ray diffraction study of the structure of perchlorate and iodine monocrystals was made by the method of three-dimensional electron [illegible]. The following cell constants are given:

	$[C_7H_7][ClO_4]$	$[C_7H_7]I$
$a = b$ (Å)	9.39 ± 0.04	9.01 ± 0.02
c (Å)	8.54 ± 0.04	8.22 ± 0.02
V (Å^3)	682	668
$d_{measured}$ (g/cm^3)	~1.4	~1.8
$d_{calculated}$ (g/cm^3)	1.66	1.89
M	191.6	218.05
n	3	3

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Crystal Structure of Tropylium Perchlorate and Iodide

The [illegible] of tropylium [illegible], [illegible] of C - C and other data are given in Figs. 1, 2, 3, 4, [illegible]. There are 5 figures; and 5 references: 1 U.K., 1 British, 3 Soviet. The U.K. reference is: M. J. S. Dewar, R. Pettit, J. Chem. Soc., [illegible]).

ASSOCIATION: Institute of Element-Organic Compounds Academy of Sciences USSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

SUBMITTED: April 20, 1959

Card 2/5

5 3600, 5.3[illegible]

7e073
SOV/62-60-1-19/37

AUTHORS: Struchkov, Yu. T., Solenova, S. L.

TITLE: Steric Hindrance and Molecule Conformation
Communication I. Steric Hindrance in Molecules of Polyhalogenated Benzenes and Their Derivatives

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, Nr 1, pp 104-110 (USSR)

ABSTRACT: X-ray structural analysis was made of 15 polyhalogenated benzenes and their derivatives. The value of D (distances between the centers of nonbonded atoms), D' (sum of the corresponding intermolecular radii), $\Delta D = D' - D$ (expressing the steric interaction between the given atom pair), and $\Sigma \Delta D$ (conventional measure of the total steric hindrance computed for all atom pairs in the molecule) were determined. The analysis indicated the presence of a substantial steric hindrance in the majority of the compounds investigated; the highest was shown in 2,4,6-trichloronitrobenzene and

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Steric Hindrance and Measurable Conformations. Communication I.

(60V3
SOV/62-60-1-19/37

2,6-diiodo-4-nitroanisole. In the former, the nitro group must be located at a right angle in relation to the ring plane; in the latter, the methoxy group must be also at a right angle to the ring plane. The remaining steric hindrance is still quite considerable in the above configurations, so that deformation of the bond angles must be expected. Since a high degree of bond angle deformation was found in 2,4,6-trichlorobromobenzene ($\Sigma\Delta D = 1.58A$), measurable angle deformations should be found in all molecules with $\Sigma\Delta D \geq 1.6A$. This was found to be true in 9 of the compounds investigated. There are 17 figures; 1 table; and 7 references, 1 U.S., 1 U.K., 5 Soviet. The U.S. and U.K. references are: Steric Effects in Organic Chemistry, (Melvin S. Newman, ed.), New York (1956); E. Harnik, F. H. Herbstein, G. M. Schmidt, F. L. Hirshfeld, J. Chem. Soc., London, (1954) 3288.

ASSOCIATION: Institute of Elemento-Organic Compounds, Academy of Sciences USSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

SUBMITTED: June 14, 1958

Card 2/2

81930
S/062/60/000/06/01/011
B020/B061

5.3700B

AUTHORS: Starovskiy, O. V., Struchkov, Yu. T.

TITLE: Molecular and Crystal Structure of Ferrocene Disulfochloride

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 6, pp. 1001 - 1009

TEXT: Ferrocene disulfochloride $(ClSO_2C_5H_4)_2Fe$, synthesized by E. G. Perevalova and S. S. Churanov (Ref. 4) in the laboratoriya khimicheskogo fakul'teta MGU (Laboratory of the Department of Chemistry of Moscow State University), is examined here. Ferrocene disulfochloride forms thin bright yellow scales which crystallize well from dichloroethane and benzene; its decomposition point is 150°. As apart from the majority of sulfochlorides, ferrocene disulfochloride is stable in air, and is soluble in aqueous alcohol. It is also extraordinarily resistant to radioactive radiation, all of which points to the fact that the polarity of the bond S - Cl in ferrocene disulfochloride is considerably smaller than in other aromatic sulfochlorides. The structure of ferrocene di-

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sulfochloride was examined roentgenographically, and the parameters of the crystal lattice were determined, as were the shortest intermolecular distances. Fig. 1 shows the scheme of the molecular structure of ferrocene disulfochloride, and Fig 2, the projection of the electron density ρ onto the xz-plane. The atomic coordinates obtained in the initial stages of the analysis (Table 1) and the atomic coordinates obtained from a three-dimensional electron-density series (Table 2) are given. Fig. 3 shows the model of the molecule on the basis of the three-dimensional electron-density series. The interatomic distances and the valence angle in ferrocene disulfochloride are set out in Table 3. Fig. 4 shows the geometry of ferrocene disulfochloride on the basis of data obtained in the course of this investigation, Fig. 5, the scheme of the packing of the ferrocene disulfochloride molecule in the crystal and the shortest intermolecular distances in the projection onto xy, Fig. 6, the scheme of the packing of the ferrocene disulfochloride molecule and the shortest intermolecular distances in the projection onto xz, and Fig. 7 the packing of the ferrocene disulfochloride molecule on limitation of the atoms by the intermolecular radii in the view perpendicular to the xz-plane. It is shown on the basis of the results obtained that a close electronic interaction

LYAN DUN-CHAY; STRUCHKOV, Yu.T.

Crystal structure of a solid solution consisting of 91.3o/o paradiiodobenzene and 8.7 % paradibromobenzene. Izv.AN SSSR.Otd.khim.nauk no.6:1010-1014 Jl '60. (MIRA 13:7)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Benzene) (Solutions, Solids)

STRUCHKOV, Yu.T.; KHOTSYANOVA, T.L.

Steric hindrances and conformation of molecules. Report no.3: Structure of a 2,6-dichloro-4-nitrodimethylaniline molecule and crystal. Izv.AN SSSR Otd.khim.nauk no.8:1369-1378 Ag '60. (MIRA 15:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Aniline) (Steric hindrance)

STRUCHKOV, Yu.T.

Crystal and molecular structure of phenylarsonic acid. Izv. AN SSSR.Otd. khim. nauk no.11:1962-1968 N '60. (MIRA 13:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Benzenearsonic acid)

2

69996

5.3900

AUTHORS: Kraft, M. Ya., Borodina, G. M., Strel'tsova, I. N., Struchkov, Yu. T.

S/020/60/131/05/025/069
B011/B117

TITLE: Structure of Monomeric Arseno Compounds

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 5, pp 1074-1076 (USSR)

TEXT: It was proved by the authors in their paper that among all determinations of the molecular weight of arsenobenzene given in literature, only the methods by F. F. Blicke and F. Smith (Ref 10) are correct. All results obtained with other methods are distorted by resinification reactions. All arseno compounds hitherto described can be divided into two groups: I) colored, amorphous, non-crystallizing and non-distillable compounds. Some of these are insoluble in any solvent, others are soluble in appropriate solvents only, when they form viscous solutions. They were found to be polymers (see scheme). II) Colorless and easily crystallizing, distillable substances. They have the character of monomers. A cyclic structure was demonstrated for arsenomethane (III). The situation is more complicated with arsenobenzene: its molecular weight is rather different according to the individual researchers and techniques used (399.8, 402, 642 and, finally, according to F. F. Blicke and F. Smith 895 and 915). It was obviously because of this multiplicity that the structural formula R—As=As-R ($R = C_6H_5$) was adopted. It is, however, improbable that a compound with such a

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Structure of Monomeric Arseno Compounds

structure should be colorless. The authors presume that the difference between above-mentioned results could be explained with reference to the instability of the arsenobenzene. Its resinification (polymerization) products are most readily oxidized in air up to C_6H_5AsO. The latter as well as the resinification products of arsenobenzene are very readily soluble in many solvents, but are difficult to detect whereby unreliable results for the molecular weight of arsenobenzene are obtained. The authors arrived at the conclusion that reliable data on the structure of arsenobenzene can be obtained only when the X-ray structural analysis method is used. The thin, almost colorless (yellowish) crystals of arsenobenzene form thin needles. Axis b is the longer one. The simpler shapes are pinacoids {100} and {001}. From data obtained, the authors came to the conclusion that there are 3 crystallographically non-equivalent As atoms contained in a cell. As is proved by the established projection of the electron density (Fig 1), the arsenobenzene molecule is a cyclic system consisting of As atoms. One phenyl group is bound to each As atom. The cycle is six-membered (IV). Such cyclic molecules occupy the position of centers of symmetry within the crystal. The cycle is not arranged in one plane, but has a chair-shaped configuration and a valence angle As - As - As of 93°. The outer valence angles As - As - C are

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Structure of Monomeric Arseno Compounds

99 ± 3°. The lengths of the bonds As - As are 2.44 A, and that of the bonds C - As = 1.96 A. Provided that data for arsenobenzene given by Blicke and Smith are correct, then their data on the molecular weights of p-arsenotoluene and p-arsenoanisol are also reliable. Hence, the authors come to the conclusion that there are no arseno compounds with a structure R - As=AS - R at all. They actually are either polymers (I) and (II) or cyclic compounds (III) and (IV). There are 1 figure and 10 references, 3 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze (All-Union Chemicopharmaceutical Scientific Research Institute imeni S. Ordzhonikidze). Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences, USSR)

PRESENTED: October 12, 1959, by A.N. Nesmeyanov, Academician

SUBMITTED: October 6, 1959

86045

S/020/60/135/003/029/039
B016/B054

53700 2209, 1236, 1273

AUTHORS: Starovskiy, O. V. and Struchkov, Yu. T.

TITLE: The Structure of Ditoluene Chromium Iodide

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 3, pp. 620 - 623

TEXT: The authors discuss the structure of crystals of ditoluene chromium iodide (supplied by V. M. Chibrikin, collaborator of the Institut khimicheskoy fiziki AN SSSR, Institute of Chemical Physics of the AS USSR). They state that this substance crystallizes in the steric group J2/m, and give its crystallographic constants. The cation $(CH_3C_6H_5)_2Cr^+$ has a 2/m symmetry in the crystal. Thus, the total configuration of the cation is determined: it is prismatic, with a trans-position of the methyl groups. The authors constructed the electron density in the plane xOz, and determined therefrom the positions of the atoms C_0, C_1, and C_4; by the same method, they determined the coordinates of all C atoms by means of parallel planes. Fig.1 gives the interatomic

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The Structure of Ditoluene Chromium Iodide S/020/60/135/003/029/039
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distances in the configuration of the cation. The authors conclude from their results that the length of the metal-carbon bond remains practically unchanged on the transition from an uncharged "sandwich" to the cation. The length of the bond $C_o - C_1$ (between the C atom of the methyl group and the connected ring atom) is indicated with 1.49 A. So, this bond is a little shorter than a single bond in aromatic compounds (~1.52 A). The authors explain this deviation by the fact that, in the formation of the "sandwich" type, the π-electrons of the aromatic ring are attracted by the positive charge to the central metal atom. In the present case, this attraction is intensified by the positive charge of the chromium atom. This withdrawal of π-electrons from the six-membered ring causes a slight shift of the electrons of the methyl group towards the ring. By this effect, the C-C bonds become longer as compared with benzene, whereas the C-C bond between the C atom of the methyl group and the C atom of the aromatic ring becomes shorter. By this electron shift, the positive charge of the Cr atom decreases slightly, and causes the formation of a positive charge on the organic part of the cation. The investigations showed that the CH_3 group is outside the plane of the carbon ring, which

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The Structure of Ditoluene Chromium Iodide 86045 S/020/60/135/003/029/039
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is explained by a compromise between a "compression" of atoms (reduction of the distance $CH_3 \cdots C_4^1$ by 3.8 - 3.5 = 0.3 A) and a distortion of the valency angle of the carbon atom C_1 by 4°. Fig. 3 shows a projection of the structure of $(CH_3C_6H_5)_2CrI$ on the plane ac with the shortest interionic distances. This structure consists of infinitely dense layers in the planes xOz; x1/2z; x1z.... . The layers have no limit density; they retain holes in the positions x = 1/2, z = 0, and x = 1/2, z = 1/2. These holes are covered on top and bottom by ions of the upper and lower layers. The authors consider the very simple type of ion packing to be the most important characteristic of this crystal structure. In this fact, they see a confirmation of the similarity of inorganic and elemental-organic ion structures to spherical-symmetric ions (particularly to the sandwich-π-complexes). They thank Professor A. I. Kitaygorodskiy for his interest in their work. There are 3 figures and 7 references: 2 Soviet, 3 British, and 2 German.

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STREL'TSOVA, I.N.; STRUCHKOV, Yu.T.

Steric hindrance and conformation of molecules. Report No.4: Crystal structure of tetrabromo-m-xlene and tetrabromo-o-xylene. Izv. AN SSSR. Otd. khim. nauk no.2:250-259 F '61. (MIRA 14:2)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Xylene--Spectra)

AVOYAN, G.L.; STRUCHKOV, Yu.T.

Crystal structure of 4,4'-dichlorocenaphthene. Zhur. strukt. khim. 2 no.1:67-69 Ja-F '61. (MIRA 14:2)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Acenaphthene)

DAVYDOVA, M.A.; STRUCHKOV, Yu.T.

Crystal structure of 1,4,5,8-tetrachloronaphthalene. Zhur. strukt. khim. 2 no.1:69-71 Ja-F '61. (MIRA 14:2)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Naphthalene)

STREL'TSOVA, I.N.; STRUCHKOV, Yu.T.

Steric hindrance and molecule conformation. Report No. 5: Crystalline structure of Hexachlorobenzene. Zhur.strukt.khim. 2 no.3:312-326 My-Je '61. (MIRA 15:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Benzene) (Crystallography)

STAROVSKIY, O.V.; STRUCHKOV, Yu.T.

X-ray diffraction studies of $Co_2(C_5H_5)_5$. Zhur.strukt.khim. 2 no.5:612-614 S-O '61. (MIRA 14:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Cobalt compounds) (Crystallography)

KITAYGORODSKIY, A.I.; STRUCHKOV, Yu.T.; AVOYAN, G.L.; DAVYDOVA, M.A.

Steric interactions in some halo derivatives of naphthalene. Dokl. AN SSSR 136 no. 3:607-609 Ja '61. (MIRA 14:2)

1. Institut elementoorganicheskikh soyedineniy AN SSSR. Predstavleno akademikom A.N. Nesmeyanovym.
(Naphthalene) (Steric hindrance)

DAVYDOVA, M.A.; STRUCHKOV, Yu.T.

X-ray diffraction determination of the structural formula for one of the isomeric tetrabromonaphthalenes. Izv.AN SSSR.Otd.-khim.nauk no.6:1123-1124 '62. (MIRA 15:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Naphthalene) (X rays--Diffraction)

AVOYAN, R.L.; STRUCHKOV, Yu.T.

Crystallographic data of some derivatives of acenaphthene. Zhur. strukt.khim. 3 no.1:99 Ja-F '62. (MIRA 15:3)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Acenaphthene) (Crystallography)

AVOYAN, R.L.; STRUCHKOV, Yu.T.

Crystallographic data of some derivatives of bicyclo (2, 2, 1)heptane. Zhur.strukt.khim. 3 no.1:100 Ja-F '62. (MIRA 15:3)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Norbornane) (Crystallography)

S/192/62/003/005/002/003
D267/D308

AUTHORS: Kaluskiy, Z.L., Avoyan, R.L. and Struchkov, Yu.T.

TITLE: X-ray diffraction investigation of diferrocenyl, its derivatives and terferrocenyl

PERIODICAL: Zhurnal strukturnoy khimii, v. 3, no. 5, 1962, 599-602

TEXT: The primary purpose of the research was to confirm the structural formulas attributed to these compounds on the basis of the method of preparation and of the chemical and spectrum properties. The following compounds were subjected to X-ray diffraction analysis: diferrocenyl, bis-1-(1'-chloroferrcenyl), bis-1-(1'ethylferrocenyl), bis-1-(1'acetylferrocenyl), bis-1-(1'carbmethoxyferrocenyl), and terferrocenyl (or: 1,1'-diferrocenylferrocene). Their molecules were found to be centrally symmetrical, which bears out the coplanarity of the two cyclopentadiene rings. The tabulated results provide the following data: structural formula and molecular weight, description of crystals, space group, cell parameters,

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VOL'PIN, M.Ye.; STRUCHKOV, Yu.T.; VILKOV, L.V.; MASTRYUKOV, V.S.; DULOVA, V.G.; KURSANOV, D.N.

Structure of the products obtained in the reaction of acetylene with bivalent derivatives of germanium. Izv. AN SSSR. Ser. khim. no.11:2067 N '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.